

7.1 Constituencies of High-growth, Multi-market Economic Development

1. Centers of Excellence

- a. Commonwealth Center for Advanced Manufacturing
- b. Commonwealth Center for Advanced Logistics
- c. Center for Innovative Technology
- d. Virginia's Center for Unmanned Systems
- e. Institute for Advanced Learning and Research
- f. Virginia Biotechnology Research Park
- g. Virginia Bioscience Health Research Partnership
- h. Virginia Academy of Science, Engineering, and Medicine

2. University & Technology Transferable Research

- a. University of Virginia
 - i. iLab
 - ii. UVA Licensing & Ventures Group
- b. Virginia Tech
 - i. LINK, Center for Advancing Industry Partnerships
 - ii. Virginia Tech Intellectual Properties, (VTIP)
 - iii. APEX Center for Entrepreneurs
- c. Virginia Commonwealth University
 - i. Da Vinci Center
 - ii. Innovation Gateway (Tech Transfer)
 - iii. VCU Ventures
- d. George Mason University
 - i. The Center for Innovation and Entrepreneurship (CIE)
 - ii. GMU Office of Technology Transfer
- e. Virginia State University
- f. Old Dominion University
- g. Norfolk State University
- h. College of William & Mary
 - i. William & Mary Entrepreneurship Center
- i. James Madison University
- j. Christopher Newport University
- k. George Washington University Virginia Science and Technology Campus
- l. Hampton University
- m. Liberty University
- n. Radford University
- o. University of Mary Washington
- p. Virginia Military Institute
- q. Longwood University
- r. Virginia Research Investment Council
- s. State Council for Higher Education of Virginia

3. Entrepreneurial Tech-centric Community Builders (Venture-backed, Research-driven)

- a. 1717 Innovation Center/Startup Virginia
- b. 757 Accelerate
- c. Activation Council
- d. Charlottesville Business Innovation Council
- e. Fredericksburg Technology Council
- f. Innovate Hampton Roads

- g. Launch Place
- h. LGBT Tech
- i. Lighthouse Labs/LHL University
- j. Lynchburg Technology Council
- k. MACH 37
- l. Northern Virginia Technology Council
- m. Opportunity Southwest
- n. RAMP Business Accelerator
- o. Re-invent Hampton Roads
- p. Richmond Technology Council
- q. Roanoke-Blacksburg Technology Council
- r. Shenandoah Valley Technology Council
- s. Southern Piedmont Technology Council
- t. Southwest Virginia Technology Council
- u. Startup Champions Network
- v. Staunton Innovation Hub
- w. Valley Innovation Council
- x. Venture Forum RVA

4. Capital Stack Investors (Angel, Pre-seed, Seed, Venture)

- a. 757 Angels
- b. Activation Capital
- c. Benjamin's Desk
- d. Black Girl Ventures
- e. CAV Angels
- f. Central Virginia Angels
- g. Charlottesville Angels Network
- h. CIT Gap Funds
- i. Common Wealth Growth Group
- j. Ignition Fund
- k. Launch Place Funds
- l. New Dominion Angels
- m. NRV
- n. Shenandoah Valley Angels Network
- o. Trolley Ventures
- p. UVA LVG Seed Fund
- q. VT Investor Network
- r. VTC Innovation Fund

5. General Assembly Leadership & Influencers

- a. Senator Hanger
- b. Senator Norment
- c. Senator Dunnavant
- d. Senator Howell
- e. Senator Saslaw
- f. Speaker Cox
- g. Chairman Jones
- h. Majority Leader Gilbert
- i. Minority Leader Filler-Corn
- j. Delegate Sickles
- k. Virginia Chamber of Commerce

- I. VABio
- m. Growth & Opportunity Board

7.2 Geography of Constituencies

1. Central Virginia

- a. Activation Capital
- b. Venture Forum RVA
- c. 1717 Innovation Center/Startup Virginia
- d. Lighthouse Labs/LHL University
- e. Charlottesville Business Innovation Council
- f. Richmond Technology Council
- g. Commonwealth Center for Advanced Manufacturing
- h. Commonwealth Center for Advanced Logistics
- i. Virginia Biotechnology Research Park
- j. Virginia Bioscience Health Research Partnership
- k. University of Virginia
- l. Virginia Commonwealth University
- m. Virginia State University
- n. Longwood University
- o. College of William & Mary
- p. Charlottesville Angel Network
- q. UVA Seed Fund
- r. CAV Angels
- s. NRV
- t. Trolley Ventures
- u. Central Virginia Angels

2. Northern Virginia

- a. MACH 37
- b. Black Girl Ventures
- c. Northern Virginia Technology Council
- d. Fredericksburg Technology Council
- e. Center for Innovative Technology
- f. Virginia's Center for Unmanned Systems
- g. George Mason University
- h. Mary Washington University
- i. CIT Gap Funds
- j. New Dominion Angels
- k. Benjamin's Desk

3. Shenandoah Valley

- a. Staunton Innovation Hub
- b. LGBT Tech
- c. Shenandoah Valley Technology Council
- d. James Madison University
- e. Virginia Military Institute

4. Virginia Mountains

- a. RAMP Business Accelerator
- b. Roanoke-Blacksburg Technology Council
- c. Lynchburg Technology Council
- d. Valley Innovation Council
- e. Virginia Tech
- f. Radford University
- g. VTC Innovation Fund

- h. Common Wealth Growth Group
 - i. VT Investor Network
- 5. Southside**
 - a. Launch Place
 - b. Launch Place Funds
 - c. Southern Piedmont Technology Council
 - d. Institute for Advanced Learning and Research
- 6. Southwest**
 - a. Opportunity Southwest
 - b. Southwest Virginia Technology Council
- 7. Coastal Virginia**
 - a. 757 Angels
 - b. Re-invent Hampton Roads
 - c. Innovate Hampton Roads
 - d. Southwest Virginia
 - e. Norfolk State University
 - f. Old Dominion University
 - g. Christopher Newport University
 - h. Ignition Fund
- 8. Chesapeake Bay**
 - a. Pamunkey Indian Tribe
- 9. Statewide**
 - a. Virginia Chamber of Commerce
 - b. VABio
 - c. Growth & Opportunity Board

7.3 Workgroup/Steering Committee Recommendation

Angela Kellett	Director Economic Development, Mecklenburg County
Art Espey	Chief Operating Officer at TMI
Bernard Mustafa	Managing Partner, Pleasant Valley Business Solutions
Bob Mooney	Founding Director of NRV
Bobbie Kilberg	President, Northern Virginia Technology Council
Carrie Roth	President, Activation Capital
Chris Cain	Staunton Innovation Hub
Chris Lloyd	Senior Vice President, McGuireWoods Consulting
Christopher Wood	LGBT Tech
David Cufi	Associate Dean of IS Integration, VCU School of Medicine
David Touve	Director, iLab at the University of Virginia
Deborah Crawford	Vice President for Research, George Mason University
Derick Maggard	Executive Director, Apex Center For Entrepreneurs
Doug Juanarena	Retired Serial Entrepreneur
Dubby Wynne	former President and CEO of Landmark Communications Inc
Duffy Mazan	CTO, CourseMaven
Ed Albrigo	CIT President
Emil Avram	Vice President, Innovation, Dominion Energy
Erik Edwards	Founder of Kaleo
Eva Doss	President and CEO, The Launch Place
James Dyke	Sr. Advisor, State Government Relations, McGuireWoods
Jeff Gallagher	CEO, Virginia Biotechnology Association
Jeff Johnson	Director, Tech Center Corporate Research Park
Jonathan Aberman	Managing Director and Chairman, Amplifier Ventures
Josh Levi	VP of Policy, Northern Virginia Technology Council
Kristie Helmick Procter	Executive Director, Virginia Rural Center
Larkin Garbee	Director of Startup Champions Network
Marilyn Crouther	Senior Vice President and General Manager, DXC Technology
Mary Lou Bourne	Executive Director, James Madison Innovations
Michael Friedlander	Vice President for Health Sciences and Technology, VT
Michael Morales	Legislative Liaison, Office of the Secretary of the Air Force
Mike Grisham	VA Catalyst CEO
Monique Adams	Executive Director, 757 Angels
Morris Foster	Vice President for Research, Old Dominion University
Nick Serfass	President, Richmond Technology Council
Paul Hirschbiel	Chairman, StartWheel Inc.
Paul Nolde	Director, NRV
Peter Blake	Staff Director for SCHEV
Ram Ramasubramanian	Vice President for Research, University of Virginia
Richard Wintsch	Executive Director of 1717 Innovation Center and Startup Virginia
Rob Quartel	Chairman and CEO, NTEL-X

Robert McAden	President of Roanoke Blacksburg Technology Council
Ross Baird	President, Village Capital
Shannon Blevins	Associate Vice Chancellor for Economics, UVA-Wise
Somaih Lattimore	Managing Director of Lighthouse Labs University
Srirama Rao	Vice President for Research and Innovation, VCU
Todd Nuckols	Executive Director, Lighthouse Labs
Todd Stottlemeyer	CEO of CSNI

7.4 Notes from Working Group Sessions

Innovation Legislation - Investment Workshop

Date August 13, 2019

Patrick Henry Building, 1111 E Broad St, Richmond, VA 23219, USA

Attendees

H. Brian Ball, Secretary of Commerce and Trade
Robby Demeria, Deputy Secretary of Technology
Ed Albrigo, CEO, CIT
Brian Bostic – Co-Founder, Start-Up Virginia
Jim Cheng – Senior Advisor at PIE - PS and Executive Lecturer at UVA
Eva Doss – CEO, The Launch Place
Jeff Gallagher – CEOE, Virginia Bio
Dave Ihrie, CFO, CIT
Skip Maupai, House Appropriations Committee
Todd Nukols, EVP of Business Development, New Health Analytics
Rob Quartel, Chairman and CEO NTELX
Carrie Roth, CEO, Activation Capital and VA Bio+Tech Park
Bob Stolle, Sr. VP, CIT
Tom Weithman, Sr. VP, CIT
Chris West, Executive Director, Conservatives for Clean Energy
Monique Adams, Executive Director, 757 Angels
Turner Widgen, C&T
Art Espy, COO, Lighthouse Labs
Eric Edwards, Chief Medical Officer and VP R&D, kaléo
Bob Mooney, Managing Director, NRV VC
Jim Dyke, Sr. Advisor, State Government Relation, McGuireWoods Consulting

Welcoming Remarks

Informal gathering today, not statutory requirement, and follows 18-24 months of investigation to solve research and commercialization issues in Virginia through town hall meetings, interviews, and surveys.

Brief Review of Town Halls and Statewide Survey (and timeline)

- 11 town halls around the state – explained timeline beginning 1984, ITA; 2019 – legislation
- Focusing on technology-driven, high-growth, multi-market initiatives. Some similar initiatives in different areas. Complex.
- 481 participants
- Individual meetings
- 246 completed statewide survey

Three workgroups. Themes:

- Investment (today)
- Ecosystem building
- University engagement

Survey

Robby provided an overview of survey participants and their regions, self-described makeup of those in the investment field, and feedback. Robby addressed state's role in Innovation and a summary of recommendations that he received (see attached).

Major Themes (see slide for details)

- Investments
 - Mentioned Colorado model: rural innovation fund investments are revenue-based financing instead of equity-based financing
- Grants for Ecosystems Infrastructure & Research
 - 1%, hug and handshake (1H&H) – Doug J.'s language - funding idea for TTOs. Cited notes from 2005 committee where issues at TTOs (funding, documentation / processes, oversight of policies) were the same.
 - Have to make gov't nimble to support techs, emerging technologies/opps.
- Investor Networks & Due Diligence
- Tax Credits & Incentives
 - QE and SDI (Robby used to call it angel tax credit)
 - What can state do to help last two bullets – incentives for corporate engagement and PPP for hubs

Eric: asked about infrastructure already in place vs what would be new. Per Robby, what is in place:

- Investments: only GAP Fund; a little in sidecar; a little incentive to / mechanism for using LP approach (Carrie)
- Grants: Ecosystem building – in DHCD. (Robby will ask GO VA for list of capacity-building projects it has invested in.) Doug: GO Virginia has focused on workforce; struggled in what to do for entrepreneurs. Quarterbacking grants (REI) – struggling. Space is not familiar to GO Virginia Board.
 - Monique: disconnect among different pockets that exist; don't always answer mail, including on time horizon.
 - Eric: parallel efforts, not always linked. Consolidate efforts so unified, aligned strategy.
 - Robby: definitely going to consolidate. Last year: get skeleton; later, get meat on the bones. Now, do both. People support idea, are ready.
 - Jeff G.: train wreck at end of GA Session. Does this speak to issues that derailed legislation last Session? Robby: House bill: proposed a consolidated effort. Senate: proposed providing a framework and taking time to flesh out. However, work done before is not lost. Now: a lot more input from stakeholders. Question: two entities or one? He is leading to one. Doug: one. Sec. Ball: two is better than now, but one would be better.
 - Carrie: got to this place from politics, personalities. Important to keep in mind: don't dilute COV investment.
 - Barry Johnson's slide.
- Slide: Todd Nukols concept: Robby will map out categories before end of this process
 - Verticals: Research / Proof of Concept / Pre-Seed / Seed / Growth.
 - Horizontal: Infrastructure, Funding.
 - What we should be doing / where we should emphasize. Maybe will see bell curve.
 - Eric: make sure not duplicating other efforts, take advantage of what is underway
- Rob: research funding is not a COV problem to solve. It is for the universities. They have to compete successfully with peers.

“Around the World Café” Workgroups

- Investments
- Grants for Ecosystems Infrastructure and Research
- Investor Networks & Due Diligence
- Tax Credits & Incentives

Each workgroup was assigned a location in the meeting room, and over the course of ~ 1 hour, attendees joined each of the workgroups in an Around the World Café format and held a follow on report out and brief discussion.

Attendees had three opportunities to join a small workgroup. The primary (first) group’s discussion was slated for 20 minutes; the secondary group was scheduled for 10 minutes, since many thoughts would have been captured already; the third round was slated for 5 minutes. Each workgroup had a scribe that recorded participants’ key thoughts and recommendations on a flip chart-sized post-it. Following the small-group discussions, the scribe reported key points to all attendees. There were a few questions / comments, though discussion was limited due to time constraints. Robby indicated that he would pull together the meeting notes within ~ two weeks and would send key points / recommendations made during the Around the World Café to the group for feedback.

Report-out, Group Discussion, Next Steps and Dot-ocracy

“Around the World Café” Workgroups.

Grants for Ecosystems Infrastructure & Research

First group: Rob Quartel, Carrie Roth, Dave Ihrle, Troy Murphy, Samea Lattimore (NV scribe)

- Doug: ecosystems do not have the financial capacity to fund their own ecosystem
- If state is not there to help support it, they will not develop or collapse. Depending on size, may need \$2M year (ex, Roanoke-Blacksburg)
- Synergies; issues and infrastructure may not be specific to only one region
- Productivity of each region differs; each has slightly different requirements
- State should help support up to some percent of a regional ecosystem, region puts up the rest for some period of time (but doesn’t become public entity). The first group indicated a 50-50 split was appropriate. The second group thought funds could be on a sliding scale, where less well-off regions would have a higher percentage – possibly 70% - covered by the state.
- The first group indicated that the need for support probably did not extend to all nine GO Virginia regions, as not all will have the high-growth, high-tech, multi-market opportunities. Focus in areas with major research universities or federal labs. Appropriate for GO to support Main Street entrepreneurs.
- If NEWCO has annual budget of \$40M, spend \$5M on the ecosystem support.
- Reality is mainly support areas with five major research universities. Align investment around major research universities. Corporations not stepping up, as decision-makers aren’t in VA. Can’t ask localities to provide \$, they don’t have \$ and this is not their model.
- Licensing, commercialization have different pathways / costs
- Discussion of whether funding should be for translational and proof-of-concept work and/or for demonstration
- Universities not able to fund ideation stage, usually. It is too early.
- Simplify IP licensing / processes (seen as 1st / early investor with dilutable funding)

Notes on flip chart paper:

- State should help support up to 50% of a regional ecosystem, region puts up the rest for some period of time (but doesn't become public entity)
- *Robust program to capture innovation from non-traditional research universities
- Simplify IP licensing / processes (seen as 1st / early investor with dilutable funding)
- Align investment around major research universities / locations / concentrated significant impact
- Use gating for funding for ideation, pre-seed, prototyping
- Corporate engagement for grant recipients
- Grants should be collaborative – need to have corporate customer at the table (engagement, future consumption)
- Universities: same standards of impact / outcomes

Tax Credits & Incentives

- Angel investor tax credit
 - Disincentive / cap is problem
 - Bigger pool, or ladder is needed
 - LLCs look through issue; should go to member level
 - Timeline of credit
 - Ops / efficient process makes it simpler for person taking credit.
- Small Business investment grants –
 - Size of bucket small; size of reward big
 - Too rich? Consider reducing from 50% to 25%
 - Consider limiting to receiving one time
- Desire to see clear analysis of what is successful in other states - best practices, pros/cons, lessons learned - so can benefit from that
- R&D tax credit – refundable (didn't now doesn't exist now)
- Corp engagement, PPP in accelerators, etc. – if corporations invest, currently no financial incentive
- Angels investing post-revenue. Creates big valley of death
- Capital Gains – noted by groups though not examined

Investments

- Increase support for direct investment in companies at the pre-seed and seed stages. Additionally there was strong support for establishing a fund that could invest in later stages for companies that had previously received seed funding.
- Develop a state side-car fund that would invest with CIT and regional funds
- COV support for regional funds and programs to include Limited Partnerships, underwriting, and operational funding for regional ecosystem programs.
- Some participants expressed the opinion that public funds should be used for infrastructure rather than investment.
- The participants recognized the importance of the OAG opinion and any limitations that may rise from the language in the opinion. Legislation may be required to authorize desired programs.
- Reconsider sectors eligible for investment. Currently, the Roadmap guides high-tech, high-growth goals of VRIC and CRCF. Instead of industry sector, consider ROI and impact.
- Develop a better process for selecting industry clusters
- Development of a rural fund that uses different metrics to measure success, including economics and diversity

- Shared resources – experts, vetting, mentors, diligence, IT infrastructure, SMEs, etc. for ecosystems around Virginia
- Develop standard set of entrepreneurial metrics that the Commonwealth uses to measure success in impact and outcomes. Currently, GO Virginia allows applicants to define their own metrics.
- Are there additional resources for making investment capital that the Commonwealth could use (ex, VRS, 529)

Investor Networks & Due Diligence

- Role of state in infrastructure development – examples: database for opportunity sharing; process; statewide expert network (help investors connect to experts)
- Common framework for deal vetting
- Due diligence standards across groups
 - Standards for metrics
 - Information-sharing portal / information-sharing mechanisms
- Support inter-region communications among angels
- Information on shared resources
- Investor / investment preparedness: get investors to be better investors; more training for founders
- Discussion among / centralized location for information for investors; currently, it's hard to know what's happening

Innovation Legislation – Ecosystem Building

Date August 20, 2019

Patrick Henry Building, 1111 E Broad St, Richmond, VA 23219, USA

Attendees

Robby Demeria, Deputy Secretary of Technology

Ed Albrigo

Other attendees – list not available

Data management

Ed Albrigo reported out.

Though data management topic, the group came at from what to do and addressed other topics.

Data management: whose data are you talking about, what are you collecting, who owns it, who is collecting it, who is cleansing, and how is it being distributed? Talked about the need for startup-related economic data.

Funding angel networks was important.

Do not compete by forming a state-level or “nest” angel network. Let each area organically build up their own network(s).

- Shared data platform: build a library on angel and funding sources, one that can be shared for each angel network and with other investors and entrepreneurs. Support for networks was discussed, with state to pay for executive director / staff that operate angel networks

- Due diligence – anything that will facilitate information sharing. Already a movement to share due diligence data; this is where non-reliance agreements come up. Believe can work through the non-reliance agreement issues.
- Public, open source investment marketplace: clarifying intent / words is important. First group: “public” implies the government owns it, and the CoV should not build and operate a marketplace. Second group: the “public” is a platform *open* to the public, not one that is owned or operated by government.
- If there is a platform, how much should the state fund these private platforms? Should state fund one? Should it fund multiple platforms?
 - Robby – state has multiple platforms now
- Broad agreement on a “Common App” for angel, seed-stage investors. Baseline effort. One publically funded app would identify and collect baseline data, for example, 50 attributes that are common to what all investor networks need to know. If specific groups want to add attributes for their own investment process, that is fine.
- Need to define attributes of high-growth companies, as these are the ones targeted, no lifestyle companies. High-growth can be thought of as venture-backed, though many high-growth companies have not taken venture capital. Many people agreed that high-growth does not include lifestyle companies, while still need to define attributes of a high-growth company.

Marketing

Premises: General Assembly does not like to fund marketing, and any consolidation of overall marketing efforts, if it rests in the wrong hands, could mean death to all issues for minor players.

- Leadership: first and foremost: must have governor that that understands a startup ecosystem is important, can speak from his bully pulpit about a common brand that has an articulate strategy for startup development that emphasizes regional voices.
- Showcase and highlight startup activity and assets that enable that startup activity.
- Must be managed by a person or persons: actively managed and measured. Cannot be just have everyone contribute to cloud. Can exist within web hub but should be ? and social at its heart and may have to talk about all sectors of entrepreneurship to be successful.
- Must have metrics for return on marketing. Might include: returning founders into the State of VA who originally started here, increase in policy changes that positively impact startup environment, number of new Virginia founders that decide to start a startup, impressions that marketing has in and outside of the market, and increase of funding that flows into marketplace.

Infrastructure

- Statewide coordination of regional ecosystem persons or entities. Role definition for the function of person or entity and developing a culture for the person or ecosystem that embraces spirit of experimentation.
- Distribution of funds: want state to not directly fund businesses, but funding would through regional groups, so autonomy and decision-making happen at local level.
- Ecosystem-building capacity grant: Think about this with more intention: develop a long-term funding strategy from the state that has measurable outcomes. Concern: felt like short-term engagement, perhaps a 1-3 year-funding mechanism. Need to consider what this would look like for years 3-10. Funding would flow as long as measures are being met. If not meeting measurables: instead of cutting off the region, a statewide coalition would identify early indicators if success is *not* being met; then provide support.

- Tool would provide entrepreneurs with connections to money, mentorships and even customers. Tool building (could be under data management): important to consider the infrastructure we want, which is some kind of a tool that is customized by region, while inter-connected across the state. Each region would use the tool for own purposes, and it would go across state. Adoption is important. When look at building tools, must have trust, transparency and connectivity across the ecosystem, so people buy. Build out grass-roots leadership and incentive local regions to adopt. Incentives be determined at local level?
- Innovation Fund: Should come from state level. Indirect funding; state is not funding entrepreneurs directly, but coming through regional vehicles. P/P funds do not do funding as fast as deal flow, but regional funds more tied in to what is happening and time appropriate.
- Regional quarterback: ecosystem builder network. Build out ecosystem “health score” so each region would get a health score, could enroll in a challenge to improve score, and could be connected to regions more like them.
- Events: funding or supporting an event for ecosystem builders to connect. Tech councils are part of fabric. Goes back to definition of partners and players in ecosystem; determine how we build coalition.

Higher Ed

- Entrepreneur in Residence: two scenarios
 - Statewide founder network. Experienced, capable motivated, connected invidious who run companies that might come out of universities: funding for them to commercialize. Hire them to start companies.
 - Local founders in development: design folks themselves: post-docs, PHDs, try to organically grow founders, entrepreneurs through curriculum. In a program to learn entrepreneurship as PhD and post docs.
- Proof of Concept:
 - CRCF+, more funding.
 - Matching grants: multiple entities are brought together, so if one makes a decision, subsequent top up(s) follow. Example given of CRCF program and Cville Match, which provides additional \$25k to awardees that are based on the City of Charlottesville and meet other criteria.
 - Milestone-based funding. Make grant \$ larger and get all of it only if complete what proposed.
 - Market pilots: incentive health systems to be better centers for testing, or, instead, expand to all state resources / entities that could be leveraged at pilot locations for projects.
- General support for startups: Can universities help startups with research challenges, large-scale pilots and data?
 - Talent: mostly about commercialization. Many people at universities; students are resource.
 - University assets. Most of university property is not for use by commercial activity, yet in many communities, especially smaller cities, the university is the one place that has asset(s). Space also is often unused and available in the summer. One thought is to create third spaces: new infrastructure funded by state, community, university. General support for internships. Example: matching support for interns, companies and universities support.
 - University concierge or navigator – person / office identified by the university that is the POC / person that can help those from the outside with inquiries. “Accidental quarterback.”

- Project pool: help companies put projects into classes, not just startups. Some issues of immediate commercial benefit taking place in class for credit. Can state create opportunity where get some credit / learning something
- Alternative funding for tech transfer. Not discussed further. Comment from meeting participant: goes back to salaried funding for person that on the ground to help commercialize.
- Intern – job shadowing. Consider adding this to college expectation. Job shadowing service is part of high school expectation, and though it may occur in college, it is not part of the college expectation. (Example: CS Dept. internship program.)

Innovation Legislation – University Engagement in Innovation Economy

Date August 27, 2019

Patrick Henry Building, 1111 E Broad St, Richmond, VA 23219, USA

Attendees included:

Secretary Ball

Deputy Secretary Robby Demeria – led discussion

Bob Armstrong

Mary Lou Bourne

Jenny Carter

David Cifu

Aurali Dade

Jeff Gallagher

Mark Gignac

Mark Goodwin

Nancy Grden

Dave Ihrle

Jeff Johnson

Marty Kaszubowski

Sharon Krueger

Somiah Lattimore

Paul Liberty

Sean Mallon

Sheri McGuire

Ivelina Metcheva

Nicky Monk

Jason Powell

John Provo

“Ram” Ramasubramanian

Emily Salmon

Julie Summs

David Touve

Nancy Vorona – scribe

Martha, VMI

Kerry (?), NASA TTO

Secretary Ball –

Thinks have greatest opportunity here, with this workgroup. Help come up with ideas to define for the legislative package that will submit in January.

Welcoming Remarks

Robby introduced himself and provided background, including the transition of SecTech to C&T and rationale for transitions of IEIA to C&T and VITA to Administration. Robby joined C&T in July 2018 and what has been a 30-year conversation is being undertaken in 18 months.

Following the 2019 G.A. Session, are spending more time to figure out the solution and are broadening the conversation.

Now 90% in agreement; rest haven't determined what path should be.
Informal gathering today, not statutory requirement, and follows 18-24 months of trying to solve research, commercialization issues in VA

Showed timeline 1984 - 2019

Brief Review of Town Halls and Statewide Survey (and timeline)

- 11 town halls around the state – explained timeline beginning 1984, ITA; 2019 – legislation
- Showed timeline March – November 2019
- Focusing on technology-driven, high-growth, multi-market initiatives. Some similar initiatives in different areas. Complex.
- 481 participants
- Individual meetings. Half-way through
- 246 completed statewide survey
 - 40% were founders – who he is serving
 - Of founders, ~ 1/3 high growth, in tech
 - Research was small, one reason why this group is important
- Fall – work with money committees
- November – ID patrons to go into session
- Different time, as going into an election. Now working with senior administration officials, GA staff

Three workgroups. Themes:

- Investment
- Ecosystem building
- University Engagement (most important as far as he's concerned)

Focus is on high-growth, research-driven, venture-backed multi-market, and programs that support that.

Survey

Robby provided an overview of survey participants and their regions, self-described makeup of those in the investment field, and feedback. He addressed state's role in Innovation.

Major Themes (see slide for details)

- Research Commercialization
- Workforce Development
- Infrastructure
- Tech Transfer Offices

Things to remember

1. TTOs are not three-headed monsters
2. VA higher ed is a decentralized funding system; independence is respected and key to your successes. Need to find creative ways to make this work.
3. Not interested in and no intention to cause harm to existing or future relationship with mature companies. Interested in startups
4. Fundamentally believe the rule is : universities will not make \$ off research-driven startup companies
5. Robby is in this for the Founder and wants to partner with universities

Feedback from Town Halls:

Research Commercialization

- Research Commercialization Fund (CRCF+ and/or milestone-based funding)
- Help startups with research (Robby thinks the new initiative will be for startups. If need mature company to develop technology, the university does that)
- EIR statewide founder network, or local founders and post-docs
- State to provide founding for ideation, pre-seed, prototyping

Jason: during McAuliffe admin, pitch for biomed. Not really tech transfer, but de-risking. Robby recommended bringing this up in the Research Commercialization workgroup. (NB: Jason did not join the RC group.)

Workforce Development

- Thousands upon thousands of students – would like them to get to work
- Support for internship or apprenticeship (funding)
- Project pools for startups (not just mature businesses)

Infrastructure

- Most of the university property is not used for commercial activity (P3 activity) (Story of prototyping OK, not if commercial activity)
- Encourage or incentivize state resources to be better centers for research and locations for pilot projects
- University concierge

TTO

- 1%, Hug and Handshake (1%H&H) Funding
- Make sure this functions at highest level across the state

Robby showed 2005 quote, indicating that the problem facing TLOs is that by operating on revenue generated by licensing, they are susceptible to large swings in funding and therefore cannot maintain steady marketing and outreach programs. He asked the group if this was still true. Ivelina said is it no longer true, and Sean and Mary Lou agreed with that. Robby asked if this would still be true in the event of an economic dip and about metrics. Ivelina responded that licensing revenue is less a metric now; funding comes from the university budget rather than fees.

Robby – some barriers to research for a startup:

- One barrier he has heard is that the royalty fee / % desired by university results in the startup not being investible by private business

- Could state guarantee a return in return for 1%H&H? Incentivize to get things out: it moves businesses into the market and doesn't affect relationships with large cos. If big exit: university gets 1% (royalty, founder, tbd by university).
- Mentioned Apex Center for Entrepreneurs at VT
- Slide deck included: slide of Barry Johnson's from UBED meeting, valley of death and federal funding programs, and slide of the continuum, Research to Growth, and where support and gaps exists and where the state could play a role.

In response a question about support for biotech, Robby mentioned state support for the biomedical side includes that for the Bio+Tech Park, but need to focus. Also referenced current grant programs that require go/stop/go and working with different groups: CRCF and SBIR (CIT), then SCHEV (VRIF), then VBHRC. Pass through to VBHRC; possibility of giving them more money

- Comment by attendee: need to incentivize technology pull

“Around the World Café” Workgroups

- Research Commercialization
- Workforce Development
- Infrastructure
- Tech Transfer Offices

Each workgroup was assigned a location in the meeting room, and over the course of ~ 1 hour, attendees joined each of the workgroups in an Around the World Café format and held a follow on report out and brief discussion.

Attendees had two opportunities to join each workgroup. Each workgroup had a scribe that recorded participants' key thoughts and recommendations. Following the small-group discussions, the scribe reported key points to all attendees. There were a few questions / comments, though discussion was limited due to time constraints.

Infrastructure

David Touve reported out and addressed the three bullets provided:

- 1) Most of the university property is not used for commercial activity (P3 activity) (Story of prototyping OK, not if commercial activity)
 - 2) Encourage or incentivize state resources to be better centers for research and locations for pilot projects
 - 3) University concierge
- 1) Noted that the issue of university property for commercial activity may not affect all universities, as some may have figured it out, or the issue may not affect all spaces on a given university.
 - Ideas: Encourage or incentivize, financially or otherwise, access to or presence of resources in these spaces. If a state-level rule is preventing access to spaces, eliminate the rule(s), and then each university can set its own charter for how it wants the space used.
 - Subsidize, through some fee-based structure, access to the space. Consider:
 - If people want to use the space for commercial activity, they can, but there is a small fee, maybe subsidized in some way
 - Subsidize via a buyout of these resources, to make them available to community for commercial uses for particular windows of time
 - Providing funding for intern support, so they can help manage the space for use during off hours. This includes a workforce development opportunity.

- 2) Encourage or incentivize state resources to be better centers for research and locations for pilot projects
 - The group indicated this has been settled and misunderstood for some time. At a high level, with large companies, these pilot projects may already be managed through OSP, as OSP deals with conflicts in research projects
 - The group saw a link between this question and the question about commercial activity on university property
- 3) University concierge
 - Probably worth funding a person or two at the university to point to resources, navigate access and even help as a convener across or beyond outside of the university. Make it their job instead of their “side hustle”. Or is this rationalizing an irrational system?

Other input, from David’s meeting notes

- State could encourage / incentivize access to resources in these spaces, or outcomes
- Shift to university charter for defining use of space, rather than a state charter

Workforce Development

Somiah Lattimore reported out.

- Thousands upon thousands of students – would like them to get to work
 - Support for internship or apprenticeship (funding)
 - Project pools for startups (not just mature businesses)
-
- The group echoed items called out in chart
- 1) Thousands upon thousands of students – would like them to get to work
 - Opportunity for pool of capital; can think about hiring local. Envision internship placement for Virginia students that would be managed locally and not by the state. Cited UMW’s “Edge” as a great program. It borrows from MD’s approach of a “sidecar fund” to support placement.
 - Bleeding need for startups to engage in Capstone projects; discussed what that looks like, and if there needs to be a de-risking engagement. While large companies like a Pfizer may come in with a specific task, need to be aware that startups don’t know where they need to place a project focus. This can be a challenge during a Capstone experience.
 - Gap in programming after an ICAP or I-CORPS program and traditional acceleration. In the state’s four accelerators, have \$3k and \$20k, and the pathway in the middle looks very different. Question about what it looks like for workforce development.
 - 2) Concept of SCHEV doing a “readiness program”: helping employer become ready for the intern, and the intern having professional development and being ready for their placement.
 - Great programs, for instance at ODU, could be duplicated across state: statewide hack-a-thon opportunities that would be workforce development and solve problems in the community, and Monarch Way (ODU, VCU, W&M) is another example: storefronts that could be on a campus or online to sell CPG (Consumer Packaged Goods) products coming out of universities.
 - 3) Gap not specific to workforce development, but speaks more to infrastructure: challenge around direct funding from universities to seed competitions or pre-X (?) activities. Universities can’t give directly to companies: how do we manage that?
 - Is there opportunity for a shared IP Partnership with VEDP or VJIP?
 - Looking at shared lab space – more infrastructure side

- Consider revisiting statewide entrepreneurship Governor's Cup Challenge

TTO

Kerry of NASA TTO reported out.

- 1%, Hug and Handshake (1%H&H) Funding
- Definition of substantial or significant use university funds vs. state funds
 - Universities have different definitions, so not on level playing field
- Patents aren't always counted as publishing, so for people pursuing tenure, it doesn't count, so there isn't incentive to pursue
- Consensus: Need
 - some kind of university repository of intellectual property that's available, and the patents and disclosure in that repository
 - centralized contacts and network: here's what networks and contacts are available
- Would like state to do a tech showcase, especially introductions to venture capitalists
- 1% (1%, Hug and Handshake) concept did not go over well, overall negative: such questions as what is the 1%, where is it going, who is using it?
- Florida model mentioned but not discussed, <https://www.florida-institute.com/>

Other input, from Kerri's meeting notes

- Universities can make \$ via tech transfer.
 - VCU: pay up front for sponsor research and get license
 - EVMS – biotech – exclusive to startups: defer profits
- Question to OAG about defining significant or substantial use of university funds
 - Provide to Jason Power: what is the framework the universities want
- Poorly defined path to commercialization and rules for who "owns" ideas
- Patent law on inventor is clear; law on contributors is murky, and funding partners could require terms
- Entrepreneur, makerspaces, library are not deemed substantial use. Recommend getting disclaimer from the beginning
- Federal funding: similar issues
- State: help identify partners to do the development
- State needs to help share information across organizations in both commercialization and tech transfer
- Gamesmanship: University of Utah – company formed with no backing
- University equity stake – can be both equity and royalty
- 1% is NOT the answer – institutionally, tech transfer is funded. 1% of research is really hard to measure.
- Intent: get more fundable startups and get market pull on startups

Research Commercialization

Nancy Vorona reported out.

- Research Commercialization Fund (CRCF+ and/or milestone-based funding)
 - Help startups with research (Robby thinks the new initiative will be for startups. If need mature co to develop tech, university does that)
 - EIR stateside founder network or local founders and post-docs
 - State to provide funding for ideation pre-seed, prototyping
- 1) Research Commercialization Fund (CRCF+ and/or milestone-based funding)
- Full agreement with a CRCF+ and milestone-based funding. Avoid stop and start and multiple access points.

- State support for ICAP Program: programmatic support for staff and travel, and could include some funding for cohort members' customer discovery travel. This could also be in infrastructure.
 - Need technology pull
- 2) Help startups with research
 - Support for product design and development: ideation, prototype and seed stages
 - Infrastructure: interest in access to facilities, equipment, instrumentation and mechanism that makes them accessible / able to be shared.
 - Need funding support for staff
- 3) EIR stateside founder network or local founders and post-docs
 - Need network of linked entrepreneurs that could support various institutions. Their support could include post-docs and younger students and local, young founders and entrepreneurs. Alumni offices could help.
- 4) State to provide funding for ideation pre-seed, prototyping (see above: strong support)
 - Coordinated, statewide university student business plan competition, coordinated by universities: move from idea to advancing the technology
 - Universities need to do more in preparing student entrepreneurs, entrepreneurial management that is in addition to that in the tradition settings, like the business school. Include in grad schools doing research, so they can think like entrepreneurs.
 - Inventory of IP from universities and a system for identifying IP, thus allowing portfolio(s) of synergistic IP to be drawn from various universities. Cited Florida Institute for Commercialization of Florida Technology. Portfolio-based IP, deliberate venture formation – based on curating IP, with on people who can do that - to feed innovation to potential investors.
 - All needs to be connected to industry. Identifying problem, advancing IP, etc.: private sector connections.
 - Focus on specific technologies and recognize that they have differences. Ex: cyber and biotech.